

THE EMBODIMENTS OF THE INVENTION IN WHICH AN EXCLUSIVE PROPERTY OR PRIVILEGE IS CLAIMED ARE DEFINED AS FOLLOWS:

1. An oral diagnostic test meal comprising a polysaccharide, wherein the oral diagnostic
5 test meal provides a quantity of glycemic carbohydrate effective to increase blood glucose levels in a vertebrate subject, and wherein the diagnostic test meal comprises less than 0.5 percent by weight soluble fibre.
2. The oral diagnostic test meal according to claim 1, wherein the oral diagnostic test
10 meal comprises less than 0.2 percent by weight soluble fibre.
3. The oral diagnostic test meal according to claim 1, wherein the oral diagnostic test meal comprises from about 50 to about 60 percent by weight glycemic carbohydrate.
- 15 4. The oral diagnostic test meal according to claim 1, 2 or 3, comprising:
 - (a) from about 35 to about 55 percent by weight glycemic polysaccharide;
 - (b) from about 10 to about 35 percent by weight mono- and disaccharides;
 - (c) from about 10 to about 25 percent by weight dietary fat, and
 - (d) from about 5 to about 8 percent by weight dietary protein.
- 20 5. The oral diagnostic test meal according to claim 4, wherein the ratio of (a) to (b) is from about 1:1 to about 2.8:1.
6. The diagnostic test meal of claim 4, wherein the ratio of (a) to (b) is from about
25 1.3:1 to about 2.8:1.
7. The diagnostic test meal of claim 4, wherein the ratio of (a) to (b) is from about 1.4:1 to about 2.5:1.
- 30 8. The diagnostic test meal of any one of claims 4 to 7, wherein the monosaccharide is fructose, glucose, or a mixture of glucose and fructose.
9. The diagnostic test meal of any one of claims 4 to 8, wherein the disaccharide is

sucrose.

10. The diagnostic test meal of any one of claims 4 to 9, wherein said dietary fat comprises from about 10 percent to about 30 percent saturated fat, and about 25 percent to
5 about 75 percent monounsaturated fat.

11. The diagnostic test meal of any one of claims 1 to 10, wherein the glycemic polysaccharide is derived from whole oat flour, defatted oat flour, oat starch, or a mixture thereof.

12. The diagnostic test meal of any one of claims 1 to 11, further comprising one or both of a source of insoluble dietary fibre, and a source of flavoring.

13. The diagnostic test meal of any one of claims 1 to 12, wherein the test meal is
15 provided in the form of a bar or biscuit.

14. The diagnostic test meal of any one of claims 1 to 13, wherein the polysaccharide is derived from a grain crop selected from the group consisting of barley, oat, wheat, rye, corn, maize, sorghum, millet, rice, amaranth and quinoa.

15. A method of diagnosing a disorder of carbohydrate metabolism in a vertebrate subject comprising:

(a) orally administering the oral diagnostic test meal of any one of claims 1-14 to the
25 subject;

(b) assaying a postprandial blood or plasma glucose concentration in the subject, and

(c) comparing the postprandial glucose concentration in the biological sample with a
30 reference glucose concentration.

16. The method of claim 15, wherein the postprandial concentration is determined from a biological sample taken from the subject.

17. The method of claim 15 or 16, wherein the disorder of carbohydrate metabolism is selected from the group consisting of diabetes mellitus, impaired glucose tolerance, insulin resistance, non-insulin dependent diabetes, maturity onset diabetes, gestational diabetes and hyperinsulinemia.

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18. The method of claim 15, 16, or 17, wherein the polysacchride in the diagnostic test meal is derived from a cereal grain selected from the group consisting of barley, oat, wheat, rye, corn, maize, sorghum, millet, rice, amaranth and quinoa.

10 19. The method of claim 18, wherein the cereal grain is oat.

20. The method of any one claims 15 to 19, wherein the diagnostic test meal is provided in the form of a bar or biscuit.

15 21. A method of determining a postprandial glucose concentration in a biological sample from a vertebrate subject comprising:

(a) orally administering the oral diagnostic test meal of any one of claims 1-14 to the subject, and

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(b) assaying a postprandial blood or plasma glucose concentration in the subject.

22. A method of determining a postprandial insulin response in a vertebrate subject comprising:

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(a) orally administering the oral diagnostic test meal of any one of claims 1-14 to the subject, and

(b) assaying a postprandial blood or plasma insulin concentration in the subject.

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23. A method of diabetes self-diagnosis and self-monitoring in a vertebrate subject, comprising:

(a) orally administering the oral diagnostic test meal of any one of claims 1-14 to the

subject, and

(b) assaying a postprandial blood or plasma glucose concentration in the subject.

5 24. A method of calculating an average value of glycemic index of a test food, comprising:

(a) generating a first glucose response curve for said test food;

10 (b) generating a second glucose response curve for a reference food, wherein said reference food is the diagnostic test meal defined according to any one of claims 1-14;

15 (c) calculating a value of glycemic index of the test food from the first and second glucose response curves, and

(d) repeating steps (a)-(c) for one, or more than one further subject, and determining the average value of glycemic index of the test food.

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AMENDED CLAIMS

**[Received by the International Bureau on 03 February 2005 (03.02.2005):
original claims 1-24 replaced by amended claims 1-24]**

**THE EMBODIMENTS OF THE INVENTION IN WHICH AN EXCLUSIVE
PROPERTY OR PRIVILEGE IS CLAIMED ARE DEFINED AS FOLLOWS:**

1. An oral diagnostic test meal comprising a glycemic polysaccharide, wherein the
5 oral diagnostic test meal provides a selected quantity of glycemic carbohydrate effective
to increase blood glucose levels in a vertebrate subject, and wherein the diagnostic test
meal comprises less than 0.5 percent by weight soluble fibre.
2. The oral diagnostic test meal according to claim 1, wherein the oral diagnostic test
10 meal comprises less than 0.2 percent by weight soluble fibre.
3. The oral diagnostic test meal according to claim 1, wherein the oral diagnostic test
meal comprises from about 50 to about 60 percent by weight of the glycemic
carbohydrate.
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4. The oral diagnostic test meal according to claim 1, 2 or 3, comprising:
 - (a) from about 35 to about 55 percent by weight of the glycemic
polysaccharide;
 - (b) from about 10 to about 35 percent by weight mono- and disaccharides,
20 said mono- and di-saccharides comprising the glycemic carbohydrate;
 - (c) from about 10 to about 25 percent by weight dietary fat, and
 - (d) from about 5 to about 8 percent by weight dietary protein.
5. The oral diagnostic test meal according to claim 4, wherein the ratio of (a) to (b)
25 is from about 1:1 to about 2.8:1.
6. The diagnostic test meal of claim 4, wherein the ratio of (a) to (b) is from about
1.3:1 to about 2.8:1.
- 30 7. The diagnostic test meal of claim 4, wherein the ratio of (a) to (b) is from about
1.4:1 to about 2.5:1.
8. The diagnostic test meal of any one of claims 4 to 7, wherein the monosaccharide
is fructose, glucose, or a mixture of glucose and fructose.

9. The diagnostic test meal of any one of claims 4 to 8, wherein the disaccharide is sucrose.

10. The diagnostic test meal of any one of claims 4 to 9, wherein said dietary fat comprises from about 10 percent to about 30 percent saturated fat, and about 25 percent to about 75 percent monounsaturated fat.

11. The diagnostic test meal of any one of claims 1 to 10, wherein the glycemic polysaccharide is derived from whole oat flour, defatted oat flour, oat starch, or a mixture thereof.

12. The diagnostic test meal of any one of claims 1 to 11, further comprising one or both of a source of insoluble dietary fibre, and a source of flavoring.

13. The diagnostic test meal of any one of claims 1 to 12, wherein the test meal is provided in the form of a bar or biscuit.

14. The diagnostic test meal of any one of claims 1 to 13, wherein the glycemic polysaccharide is derived from a grain crop selected from the group consisting of barley, oat, wheat, rye, corn, maize, sorghum, millet, rice, amaranth and quinoa.

15. A method of diagnosing a disorder of carbohydrate metabolism in a vertebrate subject comprising:

(a) orally administering the oral diagnostic test meal of any one of claims 1-14 to the subject;

(b) assaying a postprandial blood or plasma glucose concentration in the subject, and

(c) comparing the postprandial glucose concentration in the subject with a reference glucose concentration,

wherein a value of the postprandial glucose concentration higher than the

reference glucose concentration is an indication of the disorder of carbohydrate metabolism.

16. The method of claim 15, wherein the postprandial concentration is determined
5 from a biological sample taken from the subject.
17. The method of claim 15 or 16, wherein the disorder of carbohydrate metabolism
is selected from the group consisting of diabetes mellitus, impaired glucose tolerance,
insulin resistance, non-insulin dependent diabetes, maturity onset diabetes, gestational
10 diabetes and hyperinsulinemia.
18. The method of claim 15, 16, or 17, wherein the polysaccharide in the diagnostic
test meal is derived from a cereal grain selected from the group consisting of barley, oat,
wheat, rye, corn, maize, sorghum, millet, rice, amaranth and quinoa.
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19. The method of claim 18, wherein the cereal grain is oat.
20. The method of any one of claims 15 to 19, wherein the diagnostic test meal is
provided in the form of a bar or biscuit.
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21. A method of determining a postprandial glucose concentration in a biological
sample from a vertebrate subject comprising:
- (a) orally administering the oral diagnostic test meal of any one of claims 1-14 to
25 the subject, and
- (b) assaying a postprandial blood or plasma glucose concentration in the subject.
22. A method of determining a postprandial insulin response in a vertebrate
30 subject, comprising:
- (a) orally administering the oral diagnostic test meal of any one of claims 1-14 to
the subject, and

(b) assaying a postprandial blood or plasma insulin concentration in the subject.

23. A method of diabetes self-diagnosis or self-monitoring in a vertebrate subject, comprising:

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(a) orally administering the oral diagnostic test meal of any one of claims 1-14 to the subject;

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(b) assaying a postprandial blood or plasma glucose concentration in the subject, and

(c) comparing the postprandial glucose concentration in the subject with a reference glucose concentration,

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wherein a value of the postprandial glucose concentration higher than the reference glucose concentration is an indication of diabetes or an elevated blood glucose concentration resulting from diabetes that requires treatment.

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24. A method of determining an average value of glycemic index of a test food, comprising:

(a) generating a first glucose response curve for said test food;

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(b) generating a second glucose response curve for a reference food, wherein said reference food is the diagnostic test meal defined according to any one of claims 1-14;

(c) calculating a value of glycemic index of the test food from the first and second glucose response curves, and

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(d) repeating steps (a)-(c) for one, or more than one further subject, and determining the average value of glycemic index of the test food.